TIMELINE OF THE MODEL OF AN ATOM (ROUND ROBIN)

**PART 1:**

You are the Greek philosopher **Empedocles** and you have just discovered the **Four-element theory of matter**. Describe the theory and the key elements that you are proposing. Draw a diagram to illustrate your theory. Describe how this theory could be used to explain that a burned match weighs less than an unburned match and how a film of water appears inside a glass when it is inverted over a lit candle. Empedocles theory included a combination and separation of the elements based on emotion, what is it?

**PART 2:**

You are the Greek philosopher **Democritus** and you have proposed an alternative theory to Empedocles. What are the key attributes (features) of your theory of **atoms**? Explain how the heating of Epsom salts is an example of your theory.

**PART 3:**

You are an **alchemist.** What were you studying and why? Give examples.

**PART 4:**

You are a scientist who is studying matter in order to find a better model of the atom. You notice that when you put some objects near each other they repel and other objects will be attracted to each other. You propose that there are **two kinds of charges** in the world – positive and negative. These charges display particular attributes when they are together, describe the attributes. What does this tell you about atoms?

Using a balloon, rub it against your head. **Observe** what happens to your hair when you pull the balloon away. Repeat and place the balloon near the empty soda can that was provided. Record your observations. Using the theory of charges described above, explain what you think might be happening. Draw an illustration to accompany your explanation.

**PART 5:**

You are working with John Dalton. What is **Daltons Theory of Atomic Matter**? How is this different from Empedocles and Democritus’ theory of matter? What are the key attributes of Dalton’s Theory of Matter? Include a diagram.

**PART 6**

You are Michael Faraday. How did **you** modify Dalton’s model? What are you most well known for discovering? Describe how you made the discovery. Include a diagram.

**PART 7:**

Describe how J.J. Thompson changed the way we viewed the atom. Draw a diagram to illustrate his theory.

Ernest Rutherford did an experiment that proved that Thompson’s model was incorrect. Describe his experiment or create an experiment of your own that would demonstrate the same results that Rutherford’s experiment did.

Draw a diagram illustrating Rutherford’s new model of the atom.

**PART 8:**

**Niel Bohr** proposed a “**Planetary Model**” of the atom. Describe this model and create a diagram that illustrates it. Describe what is meant by **excited state** and **ground state**. We combine Bohr’s model with Rutherford’s model to create Bohr-Rutherford diagrams. Explain what these are and how we use them to illustrate the configuration of elements.

**PART 9:**

Describe the **Wave Model** of the Atom. Create a Venn diagram to compare the Wave Model of an atom and the **Bohr-Rutherford Model** of an atom.

**ASSESSMENT:**

Create a timeline of the model of the atom from the information that you gathered in the round robin. Your timeline can be horizontal or vertical but must be in chronological order. It should include diagrams. Be creative! You can create it yourself or you can use on online timeline generator, there are many free ones if you Google “create a timeline”. Due Friday.